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Original Research Article

Comparative study on gynaecological issues in adolescence among private and government school girls

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ABSTRACT

Background: Gynaecological problems of adolescents occupy a special spectrum of gynaecological disorder of all ages. This is because of the transitional phase of the physical nature of the problems which are so unique, special and specific for the age group and also because of the associated physiological factors which are very important in the growth and psychological remodelling of someone in the transition between childhood and womanhood. The study conducted with the objective to assess the extent of awareness regarding adolescent changes and problems among school going adolescents and to compare the same between government and private school adolescent girls.

Methods: We used a preformed questionnaire as our study material to assess the knowledge and attitude regarding nutritional requirement, BMI, obesity, puberty changes, menstrual hygiene and irregularities, anaemia, vaginal discharge, gynaecological tumours and HPV vaccine among the adolescent girls in both government and private schools and thereby, to compare the same between them.

Results: Awareness regarding nutritional requirement (45%, 98%), BMI (66%, 15.5%), obesity related gynaecological problems (9%, 81%) and causes for anaemia (28%, 93%) were less in government school girls when compared private school girls. Awareness on menstrual hygiene was satisfactory in both the groups. Awareness on HPV vaccination was unsatisfactory in both the groups.

Conclusions: Government school girls need better health education regarding adolescent related gynaecological issues. There is need to educate both the groups on HPV vaccination.

Keywords: Adolescence, Government school girls, Menstruation, Private school girls, Puberty

INTRODUCTION

Adolescence is a period of biological, cognitive and social transition of such magnitude and rapidity, that it is no surprise to find that it is associated with the onset or exacerbation of a number of health related problems. India has the largest population of adolescents in the world, accounts for a quarter of the country's population (243 million estimated).¹ WHO identifies adolescence as the period in woman growth and development that occurs after childhood and before adulthood, from age 10 to 19 years. It represents one of the critical transitions in the

life span and is characterized by a tremendous pace in growth and change that is second only to that of infancy.² It is the level of self-awareness among adolescents, which enables them to see where their thoughts and emotions take them. Adolescents greatly lack correct information related to their bodies' physiological, psychological and sexual changes. There is an urgent need for regular adolescent friendly information, education and communication activities covering different aspects of adolescent knowledge, needs/problems. The study was conducted with the objective to assess the extent of awareness regarding adolescent changes and problems

among school going adolescents and to compare the same between government and private school adolescent girls.

The objective of the study was to know the attitude of the adolescent girls in the awareness regarding the gynaecological problems and to compare the awareness level of government school girls to that of private/management school girls.

METHODS

A observational study on Gynaecological issues in adolescence among private and government school girls was conducted after approval from the Institutional ethics committee PSGIMSR Coimbatore in the year 2015 (3 months).

Study material: Predesigned questionnaire

Sample size: 100 in government school and 100 in private school

Inclusion criteria

All adolescent girls who attained puberty/maturity

Exclusion criteria

Those who does not belong to adolescent age group, unwillingness to participate in the study.

We used a preformed questionnaire as our study material to assess the knowledge and attitude regarding nutrition, BMI, obesity, puberty changes, menstrual hygiene and irregularities, anemia, vaginal discharge, gynaecological tumors and HPV vaccine among the adolescent girls in both government and private schools and thereby, to compare the awareness level of government school girls to that of the private school girls. After getting permission from the school authorities, we explained the aim of the study one by one of our research. Informed written consent was obtained from the students and their parents. Data was collected; statistical analysis was done by percentage and chi-square test. Statistical significance of differences between groups was tested. P value <0.05 was taken as statistically significant.

RESULTS

Table 1: Awareness of nutritional requirements.

School	Nutrition		Chi-square	P value
	Yes	No		
Private	45%	55%		
Government	2%	98%	51.42	0.00*

Table 1 showed that the government school girls had almost no awareness regarding the nutritional requirements and the additional calories needed in this

age group. In the private school, about 45 girls were aware about the importance of nutrition and also the additional calorie requirement in adolescence. We observed a statistical significance among the private and the government school girls.

Table 2 showed that in Government school, about 15.5% were aware about BMI and in private school, 66% were aware. Statistical significance was found among the private and government school adolescents.

Table 3 showed that only 9% of the Government school girls and 81% of private school girls were aware of obesity and its consequences. Statistical significance has been found among the private and government school girls.

Table 4 shows that the correct response was about 85% and 89% from government and private schools respectively. No statistically significant value has been found out regarding the awareness about puberty age.

Table 2: Awareness of BMI.

School	Awareness of BMI		Chi-square	P value
	Yes	No		
Private	66%	44%		
Government	15.5%	84.5%	35.16	0.00*

Table 3: Awareness of obesity.

School	Awareness of obesity		Chi-square	P value
	Yes	No		
Private	81%	19%		
Government	9%	91%	104.72	0.00*

Table 4: Awareness regarding puberty age.

School	Awareness of puberty age		Chi-square	P value
	Yes	No		
Private	89%	11%		
Government	85%	15%	0.707	0.400

Table 5: Awareness of physiological body changes in puberty.

School	Puberty changes		Chi-square	P value
	Yes	No		
Private	82%	18%		
Government	89%	11%	2.51	0.113

Table 5 evidences that 89% of the government school girls and 82% of the private school girls showed positive response. The awareness mindset of both the private and the government school girls remained almost same,

which thereby denotes no statistical significance regarding the physiological body changes in puberty.

Menstrual hygiene and irregularities

In our study, we had asked about the awareness of menstrual hygiene and how do they maintain it and the various menstrual irregularities.

Table 6 showed in our study that equal number of girls in both schools was aware of the necessity of hygiene

during menstruation. Towards maintenance of hygienic practices during menstruation 88% and 78% of private and government school girls were aware. Regarding normal duration of periods ($p=0.106$) and factors affecting periods ($p=0.00$), there was a statistical significance found among the government and private school. 93% and 86% of private and government school girls were aware of the menstrual irregularities. We found that majority of private school girls were less aware than government school girls regarding the consultation of doctor during menstrual problems.

Table 6: Awareness about menstrual hygiene.

School	Menstrual hygiene		Chi-square	P value
	Yes	No		
Private	100%	0%	2.02	0.115
Government	98%	2%		
	Practices of menstrual hygiene		Chi-square	P value
	Yes	No		
Private	88%	12%	1.87	0.171
Government	78%	22%		
	Duration of periods		Chi-square	P value
	Yes	No		
Private	88%	12%	2.60	0.106
Government	47%	53%		
	Factors affecting periods		Chi-square	P value
	Yes	No		
Private	46%	54%	38.31	0.00*
Government	58%	42%		
	Menstrual irregularities		Chi-square	P value
	Yes	No		
Private	93%	7%	1.62	0.203
Government	86%	14%		
	Consultation of doctor in case of menstrual irregularities		Chi-square	P value
	Yes	No		
Private	74%	26%	18.98	0.00*
Government	96%	4%		

Table 7: Awareness of anaemia.

School	Anaemia		Chi-square	p value
	Yes	No		
Private	64%	36%	1.45	0.228
Government	88%	22%		
	Causes of anaemia		chi-square	P value
	Yes	No		
Private	82%	18%	8.21	0.004*
Government	93%	7%		

Table 7 shows that about 88% and 64% were aware about adolescent prone anaemia and the causes in government school respectively. About 93%, 82% were aware in the private school. No statistical significance was found among them regarding anaemia, but the causes of anaemia had a significant value towards the government school girls.

Vaginal discharge

In our study, two questions were asked about vaginal discharge; one about normal vaginal discharge and the second question about when to consult a doctor in case of vaginal discharge, being excessive, foul smelling or associated with itching. About 57% and 76% were aware about the normal vaginal discharge and 88% and 89% were aware about the abnormal vaginal discharge and the need to consult a doctor.

Table 8: Awareness of vaginal discharge.

School	Normal vaginal discharge		Chi-square	P value
	Yes	No		
Private	76%	24%	8.10	0.004*
Government	57%	43%		
School	Abnormal vaginal discharge		Chi-square	P value
	Yes	No		
Private	89%	11%	0.49	0.825
Government	88%	12%		

Table 8 shows that about 57% and 76% adolescent girls were aware about the normal vaginal discharge and about 88% and 89% adolescent girls were aware about the abnormal vagina discharge from the government and the private school respectively. We found that there was a statistical significance among government and private school girls regarding the normal vaginal discharge.

Table 9: Awareness of gynaecological malignancies.

School	Gynaecological malignancies		Chi-square	P value
	YES	NO		
Private	62%	38%	2.67	0.102
Government	71%	29%		

Table 9 shows that about 71% and about 63% adolescents were aware about the gynaecological malignancies from government and private school. There was no statistical difference among them.

HPV vaccination

In our study, there were two questions regarding HPV vaccination; one about whether they were aware of the vaccine and its role and the second about whether they

had done the vaccination or not. The results obtained were about 5% and 42% girls from government and private school were aware of the vaccine. Even the percentage of girls, who were aware of the vaccination, did not take the vaccine. None of the girls from government school has done the vaccination and only 8% girls from the private school have done their vaccination.

Table 10: Awareness and attitude regarding HPV vaccination.

School	HPV vaccination		Chi-square	P value
	Yes	No		
Private	42%	58%	39.58	0.00*
Government	5%	95%		
School	Practice of HPV vaccination		Chi-square	P value
	Yes	No		
Private	8%	92%	8.33	0.004*
Government	0%	100%		

DISCUSSION

Nutritionally, adolescent period is the most vulnerable period because of increase demand and requirement for rapid growth and development. Nutrition and physical growth are integrally related. A healthy diet throughout puberty and adolescence is important to provide nutrients that support optimal physical growth and cognitive development. Gurpreet et al showed that adolescent subjects belonging to urban area had better knowledge than subjects belonging to rural area. Regarding height and weight and body mass index, measurement of height and weight and calculation of BMI showed that about 81% were underweight and 1.8% was approaching towards obesity.⁸ In our study, government school girls had almost no awareness on nutritional requirement.

Adolescent obesity has been identified as a significant and growing health problem leading to type-2 Diabetes, metabolic syndrome, and other health problems (Thomas and walker, 2012). Rising obesity rates around the world have had a profound impact on female reproductive health. Childhood obesity is associated with early onset of puberty, menstrual irregularities and polycystic ovarian syndrome during adolescence.⁹

The World Health Organization (WHO) describes overweight and obesity as one of the today's most important public health problem, which is being escalated as a global epidemic.¹⁰ It is also increasingly recognized as a significant problem in developing countries and countries undergoing economic transition.¹¹ The problem of being overweight and obesity is confined not only to adults but also being reported among the children and adolescents in the developed countries during the past two decades as well as similar trends are being observed even in the developing world, though less rapidly.¹²⁻¹⁴ In

our study, the awareness on BMI and obesity was about 66% and 81% among the private school girls and 81% and 9% from the government school girls respectively.

Adolescence is a time for growth spurt and puberty changes. It is a stage in which adolescents cross the line between childhood and adulthood.¹⁵ Puberty is a period of several years in which rapid physical growth and psychological changes occur, culminating in sexual maturity. The average onset of puberty is at 10 or 11 for girls and 11 or 12 for boys. Every person's individual timetable for puberty is influenced primarily by heredity, although environmental factors, such as diet and exercise also exert some influences. A cross sectional study was conducted with a sample of 320 adolescent students of ninth to twelfth classes (80 from each class). Data were collected on pre-designed, pre-tested and semi structural schedules by conducting in-depth interviews of selected study adolescents by the investigator. Mean age of female respondents was 15.02 years. 212 study adolescents were aware of at least one adolescent change. 248/272 adolescents perceived those changes as 'normal' and on the contrary, 24/272 adolescents either did not consider these changes as normal or they did not know whether the changes were normal or abnormal.¹⁶ Our results showed that both government and Private School girls had almost same knowledge on pubertal body changes.

Menstruation is a milestone event in a girls' life and the beginning of reproductive life so all aspects of menstruation need to be understood by adolescent girls.¹⁷ Lack of knowledge and poor personal hygiene practices can lead to various gynaecological problems including reproductive tract infections.

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They found that awareness regarding menstruation was more in urban adolescent girls (63.38%) as compared to rural (47.57%). Many studies revealed that most of the adolescent girls had incomplete and inaccurate information about the menstrual physiology and hygiene.¹⁸ Our study showed that, total awareness regarding need of menstrual hygiene is 100% and 98% among the private and government school girls, which was satisfactory.

The awareness about gynaecological malignancies is important in this age group as the lifestyle and attitude can prevent the occurrence of the tumours. Though gynaecological malignancies are rare among adolescents, awareness about gynaecological malignancies is important in this age group as treatment of cancers may affect the future reproductive health. In our study, 62% and 71% awareness was present among the private and the government school girls, respectively.

Recently two HPV vaccines quadrivalent Gardasil and bivalent Cervarix have been shown to be highly effective in preventing infection with high-risk type HPV16 and

HPV18, the two most oncogenic types. As these vaccines are highly effective before exposure to HPV, current guidelines priorities adolescent girls as primary group for HPV vaccination.¹⁹ HPV vaccine implementation is still facing challenges even though it seems to be a definitive intervention to control mortality from cervical cancer and has the potential to address challenges of screening in India. Implementation faces barriers of cost, acceptance and lack of awareness.²⁰

Our study showed almost none of the girls from the government school had done the vaccination. Only 8% of the private school girls are vaccinated.

CONCLUSION

In our study, we found that private school girls were more aware in the aspects of nutritional requirement, BMI, obesity related gynaecological problems and vaginal discharge. HPV vaccine awareness was unsatisfactory in both the respondents. Thus, there is a need to educate and aware the adolescent girls regarding HPV vaccination. Awareness regarding the prevalence of HPV infection and the cancer prevention benefits of the vaccine has to be made at the earliest to prevent the tomorrow's mothers being affected by cervical cancer.

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